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L17: Entry 1 of 28

File: USPT

Oct 29, 2002

US-PAT-NO: 6471948

DOCUMENT-IDENTIFIER: US 6471948 B1

TITLE: Toothpaste compositions containing cetylpyridinium chloride

DATE-ISSUED: October 29, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Adamy; Steven T.	Hamilton	NJ		
Cala; Francis R.	Highland	NJ		

US-CL-CURRENT: 424/54; 424/49

## CLAIMS:

## What is claimed:

1. A toothpaste composition comprising: a) the absence of an anionic sweetener; b) an antibacterial effective amount of cetylpyridinium chloride; c) a mixture of toothpaste forming components other than cetylpyridinium chloride, including active components, passive components, or both, at least one of which is anionic, at least one amphoteric surfactant and at least one sweetener selected from the group consisting of cationic, non-ionic and amphoteric sweeteners, whereby in the absence of the amphoteric surfactant, the anionic toothpaste forming components would bind to the cetylpyridinium chloride preventing it from being attracted to negatively charged tooth surfaces, and because of the presence of the amphoteric surfactant the cetylpyridinium chloride is able to effectively bind to the negatively charged tooth surfaces.
2. The toothpaste composition of claim 1 wherein the amphoteric surfactant is selected from the group consisting of amino acids and amine oxides.
3. The toothpaste composition of claim 2 wherein the amphoteric surfactants are selected from those having the Formula (I) ##STR3## where R.<sub>sub.1</sub> and R.<sub>sub.2</sub> are independently an alkyl group having from 1 to 4 carbon atoms, R.<sub>sub.3</sub> is a group R.<sub>sub.a</sub> or (R.<sub>sub.a</sub> --C(O)NH)--(CH.<sub>sub.2</sub>).<sub>sub.m</sub> in which m is an integer of from 1 to 4, and R.<sub>sub.a</sub> is an alkyl of from 8 to 20 carbons; and n is an integer of from 1 to 4.
4. The toothpaste composition of claim 3 wherein R.<sub>sub.a</sub> is a mixture of C.<sub>sub.14</sub> -C.<sub>sub.16</sub> alkyl groups.
5. The toothpaste composition of claim 3 wherein m is 3.
6. The toothpaste composition of claim 3 wherein the surfactant is selected from the group consisting of cocobetaine and cocamidopropyl betaine and combinations thereof.
7. The toothpaste composition of claim 2 wherein the surfactants are those having the Formula (II) ##STR4## wherein R.<sub>sub.4</sub> and R.<sub>sub.5</sub> which may be the same or different are each independently selected from the group consisting of an alkyl group having 1 to 4 carbon atoms, and R.<sub>sub.6</sub> is an alkyl group having from 6 to 10 carbon atoms, which is unsubstituted or substituted by at least one

C.sub.1 -C.sub.4 alkyl group.

8. The toothpaste composition of claim 7 wherein the surfactant is selected from the group consisting of didecyl-methylamine oxide, cocamidopropyl dimethylamine oxide, ether amine oxides and combinations thereof.

9. The toothpaste composition of claim 7 wherein the surfactant is selected from the group consisting of N,N-dimethyldodecylamine oxide, N,N-dimethyldecylamine oxide and combinations thereof.

10. The toothpaste composition of claim 1 wherein the sweetener is sucralose.

11. The toothpaste composition of claim 1 comprising at least one toothpaste forming component selected from the group consisting of whiteners, flavorants, humectants, desensitizing agents, thickening agents, abrasives and fluoride providing compounds.

12. The toothpaste composition of claim 11 wherein the abrasive material is selected from the group consisting of sodium metaphosphate, potassium metaphosphate, tricalcium phosphate, dicalcium phosphate dihydrate, anhydrous dicalcium phosphate, calcium pyrophosphate, zinc orthophosphate, alumina, hydrated alumina, aluminum silicate, bentonite, calcium carbonate, and sodium bicarbonate.

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NAME	CITY	STATE	ZIP CODE	COUNTRY
Adamy; Steven T.	Hamilton	NJ		
Cala; Francis R.	Highland	NJ		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Church & Dwight Co. Inc.	Princeton	NJ			02

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US-CL-ISSUED: 424/54; 424/49

US-CL-CURRENT: 424/54; 424/49

FIELD-OF-SEARCH: 424/49-58

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

 

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> <u>4389394</u>	June 1983	Drucker.	424/49
<input type="checkbox"/> <u>4405654</u>	September 1983	Lee	424/49
<input type="checkbox"/> <u>4839158</u>	June 1989	Michaels	424/54
<input type="checkbox"/> <u>4971797</u>	November 1990	Cherukuri et al.	424/440
<input type="checkbox"/> <u>5158763</u>	October 1992	Gaffar et al.	424/54
<input type="checkbox"/> <u>5370881</u>	December 1994	Fuisz	426/5
<input type="checkbox"/> <u>5374368</u>	December 1994	Hauschild	
<input type="checkbox"/> <u>5376360</u>	December 1994	Domke et al.	
<input type="checkbox"/> <u>5622689</u>	April 1997	Lukacovic	424/52
<input type="checkbox"/> <u>5849268</u>	December 1998	Lukacovic	424/52
<input type="checkbox"/> <u>5849271</u>	December 1998	Lukacovic	424/49
<input type="checkbox"/> <u>5948390</u>	September 1999	Nelson et al.	424/54

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
9408	April 1980	EP	
422 803	April 1991	EP	
480 811	April 1992	EP	
507 598	October 1992	EP	
920 857	June 1999	EP	
90/15592	December 1990	WO	
97/462 17	December 1997	WO	

ART-UNIT: 1614

PRIMARY-EXAMINER: Rose; Shep K.

ATTY-AGENT-FIRM: Watov &amp; Kipnes, P.C.

## ABSTRACT:

A toothpaste composition containing an effective amount of cetylpyridinium chloride and a mixture of toothpaste forming ingredients including at least one amphoteric surfactant and optionally at least one sweetener.

12 Claims, 0 Drawing figures